

feels that the Bjerknesian scheme of the moving waves in the Polar Front is not conclusive.—C. L. M.

DISTRIBUTION OF ICE IN ARCTIC SEAS, 1922.

[Reprinted from *Nature*, London, Mar. 24, 1923, p. 411.]

The publication by the Danish Meteorological Institute of "The State of the Ice in the Arctic Seas, 1922" directs attention to a somewhat unusual year, but unfortunately information is almost entirely lacking from Siberian waters and very scanty from the Beaufort Sea. By April the extent of pack in the Barents Sea was much smaller than usual. Bear Island, which had been free from ice all winter, was clear, and open water almost reached to Nova Zembla. The edge of the ice continued to retreat. In July the whole west coast of Nova Zembla was clear, and in August Franz Josef Land was probably accessible by open sea.

Early in the year conditions in Spitzbergen were about normal. In May and early June an unusual amount of ice drove round the South Cape before continuous easterly winds, but this resulted in the west coast being practically free from ice for the remainder of the summer. On the north coast conditions were particularly favorable, and a vessel reached latitude $81^{\circ} 29' N.$ Some sealers circumnavigated Spitzbergen, a feat that is not possible in most years. In the Greenland Sea the belt of pack lay more westerly than usual, and though the east coast of Greenland does not appear to have been clear of ice, open water touched the coast in about latitude $74^{\circ} N.$ during August. Jan Mayen and the coast of Iceland were free from pack from May onward throughout the summer. On the Newfoundland Banks both pack and icebergs were abundant in early spring, but July was clearer than usual. In Davis Strait the winter ice was thinner and the "west ice" less abundant than usual. In Bering Strait conditions were fairly normal, but along the north coast of Alaska the pack pressed hard and navigation was much hindered.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Meteorologist in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

Alter, Dinsmore.

Rainfall period equal to one-ninth the sun-spot period. Lawrence. 1922. p. 17-99. diagr. $24\frac{1}{2}$ cm. (Kansas univ. science bulletin. v. 13. July, 1922.)

Andrews, Walter.

Puget Sound weather and folks. p. 52-67. illus. $30\frac{1}{2}$ cm. [Excerpt: Farm journal. Phila. v. 47. April, 1923.]

Bateman, H.

Decay of a simple eddy. Washington. 1922. 7 p. 29 cm. (Nat. adv. comm. for aeron. Report no. 144.)

Belden, W. S.

Movement of a storm area across the United States and southern Canada. p. 122-126. illus. $23\frac{1}{2}$ cm. (Repr.: School sci. and math. v. 33. Feb., 1923.)

Blasingame, R. U.

Do lightning-rods protect? p. 11, 70-71. illus. $30\frac{1}{2}$ cm. [Excerpt: Farm journal. Phila. v. 47. Apr., 1923.]

Coblentz, W. W.

Further tests of stellar radiometers and some measurements of planetary radiation. Washington. 1923. p. 535-558. $25\frac{1}{2}$ cm. (U. S. Bureau of standards. Scientific papers. No. 460.)

PREDICTING DROUGHT IN EUROPE.¹

By F. EREDIA.

[Reprinted from *Science Abstracts*, March 25, 1923, p. 119.]

The author discusses the possibility of forecasting a period of drought some months in advance. Attempts in this direction have not hitherto led to a practical solution of the problem. The method generally adopted is to compare the values of certain meteorological elements, and by means of correlation to deduce from the numerical values of the relative coefficients the connection, intimate or otherwise, between the given elements. Thus some have admitted and others denied the relation between droughts and sunspots, the sun being considered as the primary determinant of all meteorological phenomena. More practical results may be achieved by examining the course of such meteorological elements as are characterized by stability, and of which it is possible to forecast the ulterior direction. Such an element is the barometric pressure.

From an examination of droughts in Italy it is clear that the characteristic barometric distribution is the persistence of anticyclonic areas in the Alpine and adjoining regions. Periods of high pressure coincide with dry periods. Extending our researches to the barometric conditions preceding droughts in the British Isles, it is found that persistent low pressure in the Arctic regions, and especially over Spitzbergen, points to the probable imminence of a dry period. In Italy, with persistent high pressure on the west coast of Europe, and especially on the French Atlantic seaboard, a shortage of rain is almost certain. We are thus led to consider droughts not as isolated phenomena, but as being intimately connected with the atmospheric circulation. The author concludes that we shall be better able to foresee the conditions favorable to the formation of dry periods the more extensive our knowledge of the meteorology of the northern regions, where profound modifications of barometric distribution are first revealed.—E. F.

¹ *Elettronica*, November, 1922, 9: 746-748.

BIBLIOGRAPHY.

- Congrès international de la navigation aérienne.**
Premier . . . Paris 15-25 novembre 1921. 4 v. in 3. Paris. [c1921.] v. 1-4. illus. plates (fold.) $25\frac{1}{2}$ cm.
- Dorno, C.**
Tageslichtmessungen in Innenräumen p. 17-26. 24 cm. (Schweiz. Zeits. f. Gesundheitspflege. 3. Jahrg. 1923.)
- Eaton, H. N.**
Aerial navigation and navigating instruments. Washington. 1922. 44 p. illus. plate. $29\frac{1}{2}$ cm. (Nat. adv. comm. for aeron. Report no. 131.)
- Eaton, H. N., & MacNair, W. A.**
Altitude effect on air-speed indicators. No. 2. Washington. 1922. 46 p. illus. $29\frac{1}{2}$ cm. [Continuation of report no. 110.] (Nat. adv. comm. for aeron. Report no. 156.)
- Eckardt, Wilh. R.**
Grundzüge einer Physioklimatologie der Festländer. Berlin. 1922. 123 p. illus. $25\frac{1}{2}$ cm.
- Eredia, Filippo.**
Il clima di er-Regina (Cirenaica). Roma. 1922. 13 p. 24 cm. (Extr.: Boll. di informazioni. Anno 1922. N. 4.)
L'organizzazione meteorologica internazionale in relazione con l'aeronautica. Roma. 1922. 15 p. 25 cm. (Atti della Soc. ital. di aerotecnica. Anno 2. N. 1-2. 1922.)
La siccità del 1921. Roma. 1923. 60 p. illus. $25\frac{1}{2}$ cm.
Sul calcolo delle precipitazioni acquee normali nella loro ripartizione annuale. Roma. 1922. 10 p. plate (fold.) $25\frac{1}{2}$ cm. (Extr.: Annali del Consig. sup. delle acque. Anno 1922. v. 4, fasc. 2-3.)
- Fonseca, Pedro S.**
Valor etiológico de la humedad atmosférica en el Salvador. San Salvador. 1922. 19 p. illus. $23\frac{1}{2}$ cm. (Mem. enviada al 6 cong. medico Latino-American, sec. higiene y demografía. La Habana, Nov., 1922.)

[Hamburg.] Deutsche Seewarte.

Funk-Wetter. Liste und Schlüssel der Wetterfunkspüche, funkentelegraphischen Zeitsignale und Eismeldungen. 4th Aufl. Altona. [1922.] 84 p. maps. 24 cm. (Deutsche Seewarte. Abt. III. Juni, 1922.)

Funk-Wetter. Beiheft. 4th Aufl. Altona. [1922.] Buchstabenlärterung und Umrechnungstabellen. 27 p. 23½ cm. (Deutsche Seewarte. Abt. III. Juni, 1922.)

Hartmann, Wilhelm.

Schichtgrenzen- und Wolkenbildung in der freien Atmosphäre. Einige Ergebnisse der Beobachtungen des Feldbergobservatoriums der Landeswetterwarte. Karlsruhe. 1922. 20 p. illus. 28 cm. (Veröffentlichungen der Badischen Landeswetterwarte. Nr. 3. Abhandlungen Nr. 2. 1922.)

Hellmann, G.

Störungen im jährlichen Gang der Temperatur in Deutschland. [Berlin.] p. 4-19. 25½ cm. (Sitzungsber. der preuss. Akad. Wissensch. II. 1923.)

Henry, Augustine.

Forests, woods and trees in relation to hygiene. London. 1919. xii, 314 p. illus. plates. 22½ cm. [Chapter 1. Influence of forests on climate. Bibliography, p. 11-12.]

Hildebrandsson, H. H.

Sur les variétés des cirrus. p. 445-457. illus. 24½ cm. (Geografiska annaler. H. 3-4. 1922.)

Hunt, Franklin L., & Stearns, H. O.

Aircraft speed instruments. pt. 1-3. Washington. 1922. 38 p. illus. 29 cm. (Nat. adv. comm. for aeron. Report no. 127.)

Hurd, Willis E.

Tropical storms of the eastern North Pacific ocean. Washington. 1923. 1 sheet. figs. 66½ x 97 cm.

Italy. Servizio idrografico.

L'opera del Servizio idrografico nel biennio 1921-1922. Memorie e studi idrografici. Roma. 1923. 218 p. figs. plates (part fold.) 26 cm.

Italy. Ufficio idrografico.

Carte annuali delle piogge nella regione veneta per gli anni 1917 e 1918. Venezia. 1922. 32 p. maps (fold.) 26 cm. (Pubblicazione N. 93.)

Kloster, Wilhelm.

Bewölkungs-, Niederschlags- und Gewitterverhältnisse der westindischen Gewässer und der angrenzenden Landmassen. Hamburg. 1922. 67 p. illus. plates (fold.) 29½ cm. (Archiv der Deutschen Seewarte. 40. Jahrg. H. 1. 1922.)

Manuel, R. P., & Navarro-Neumann, M. S.

El barógrafo de mercurio de la estación sismológica de Cartuja (Granada). Nota leída por el académico numerario Dr. Eduardo Fontseré. Barcelona. 1923. 6 p. illus. 29½ cm. (Memorias R. Acad. de cien. y artes. Barcelona. v. 17. 3d época. núm. 22.)

Mears, A. H., & others.

Altitude instruments. Washington. 1922. 64 p. illus. 29½ cm. (Nat. adv. comm. for aeron. Report no. 126.)

Mercanton, Paul L.

Influence du relief terrestre sur la teneur en ions de l'atmosphère. [Lausanne.] 4 p. 22½ cm. (Extr.: Soc. vaud. des sci. nat. Procès-verb. Séance 5 juil. 1916.)

Quelques cas historiques de réfraction atmosphérique excessive. p. 16-18. 23 cm. (Extr.: Soc. suisse de géoph., mét., et astron. n. d.)

Morocco. Service météorologique.

Note sur la signification des termes employés dans les télégrammes et radiogrammes du service de prédition de la houle au Maroc. n. p. n. d. unp. diagr. 31 cm. [Manifolded.]

Nedelkovich, Milan.

[Meteorology and agriculture.] Belgrad. 1907. 100 p. 25½ cm. [Title and text in Russian.]

Ontario. [Fire marshal.]

Lightning rod act. Rules and regulations prescribed thereunder. Standardization of equipment and methods of installation. Toronto. 1922. v. 66 p. illus. 20 cm.

Peppeler, Wilhelm.

Die Niederschlagsverhältnisse in Baden. Auf Grund 30-jähriger Beobachtungen von 1888-1917. Karlsruhe. 1922. 16 p. plates. 28 cm. (Veröff. Badischen Landeswet. Nr. 2. Abhandl. Nr. 1. 1922.)

Rosenstein, A. B.

Climate of Jaffa—Telaviv—Sarona. Telaviv. 1922. 19, xxx p. 24½ cm. [Text in Hebrew and English.]

Slipher, V. M.

Spectrum of Venus. n. p. [1921.] p. 85-89. plate. 31 cm. [Investigation of the atmosphere of Venus.] (Lowell obs. v. 3. no. 9. Bulletin no. 84.)

Spitaler, Rudolf.

Stündlicher Gang des Luftdruckes auf dem Donnersberge. 1905-1914. Prag. 1922. 121, 121 p. 32 cm. (Veröff. met. Obs. Donnersberge (Böhmen). Nr. 7-8.)

U. S. Bureau of standards.

Testing of barometers and altimeters. 3d ed. Washington. 1922. 22 p. tables. diagrs. 27½ cm. (Bur. stand. Circular no. 46.)

Wechsler, A.

Microbarograph and the measurement of heights by the barometric method. London. n. d. 8 p. illus. 21½ cm.

Wolfer, A.

Die Sonnenfleckenhäufigkeit in den Jahren 1902-1920. [Zürich. 1921.] p. 31-33. diagr. 29½ cm. (Abdruck aus Jubiläumsnumm., Astron. Nachr.)

Wright, R. C., & Taylor, George F.

Freezing temperatures of some fruits, vegetables, and cut flowers. Washington. 1923. 8 p. 23½ cm. (U. S. Dept. agric. Dept. bull. no. 1133.)

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. F. TALMAN, Meteorologist in Charge of Library.

The following titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

Aerial age. New York. v. 16. March, 1923.

Gregg, Willis Ray. What the Weather bureau is doing for aviation. p. 120-123; 136.

Aeronautical digest. New York. v. 2. April, 1923.

Meisinger, C. LeRoy. The scope of aeronautical meteorology. p. 251-252; 295.

Akademie der Wissenschaften. Sitzungsberichte. Wien. Abt. IIa. Bd. 130. H. 7 & 8. 1921.

Defant, Albert. Die Bestimmung der Turbulenzgrößen der atmosphärischen Zirkulation aussertropischer Breiten. p. 383-403.

American society of heating and ventilating engineers. Journal. New York. v. 29. March, 1923.

Hodge, O. J. The testing of anemometers. p. 75-78.

Houghton, F. C., & Yagloglou, C. P. Determining equal comfort lines. Laboratory tests conducted give results for still air conditions. p. 165-176.

Ingels, Margaret. New data on air dust determinations.—Further developments in the Anderson and Armsbach apparatus. . . p. 177-193.

Annalen der Hydrographic und maritimen Meteorologie. Berlin. 50. Jahrg. 1922.

Wiese, W. Die Einwirkung des Polareises im Grönlandischen Meere auf die Nordatlantische zyklonale Tätigkeit. p. 271-280. (Okt.)

Letzmann, Johannes. Die Trombe von Cuxhaven am 16. Juli 1922. p. 306-308. (Nov.)

Castens, G. Windgeschwindigkeitsänderung und Regenfall. p. 332-333. (Dez.)

Kleinschmidt, E. Bemerkungen zu der Arbeit von H. Bongards: Der tägliche Gang des Luftdrucks. p. 330-332. (Dez.)

Köppen, W. Jährlicher Gang der Regenhäufigkeit in der Umgebung der Ostsee. p. 313-316. (Dez.)

Spitaler, R. Erwiderung auf die Bemerkungen zu meiner Theorie der täglichen Luftdruckschwankung. p. 322-330. (Dez.)

Astronomie. Paris. 37 année. 1923.

Descombes, Paul. Les anomalies météorologiques et l'influence du déboisement. p. 79-82. (Fév.)

Raymond, G. La pluie et les orages en Provence. p. 128-130. (Mars.) [Period equal to one-fourth the rotation period of the sun.]

British astronomical association. Journal. London. v. 33. February, 1923.

Richardson, Lawrence. The distribution of light in the earth's shadow. p. 178-195.

Cuba. Observatorio nacional. Boletín. Habana. v. 18. Octubre 1922e

Millás, José Carlos. El ciclón de Isla Mujeres y Cozumel 17-18 d. octubre de 1922. p. 189-206.

Discovery. London. v. 39. March, 1923.

Britton, C. E. How upper winds are measured. p. 77-79.

Russell, A. S. Sunspots and climate. p. 79-80.